



National Transportation Safety Board

Safety Alerts:

“Is Your Aircraft Talking to You?
Listen!” and “Mechanics: Manage
Risks to Ensure Safety”



National Transportation Safety Board

Accident Involving Inadequate Repair



Joshua Cawthra, IIC

Accident Flight

- Vans RV-6
- Departed 20 minutes before accident
- Private pilot was fatally injured
- Maintenance test flight

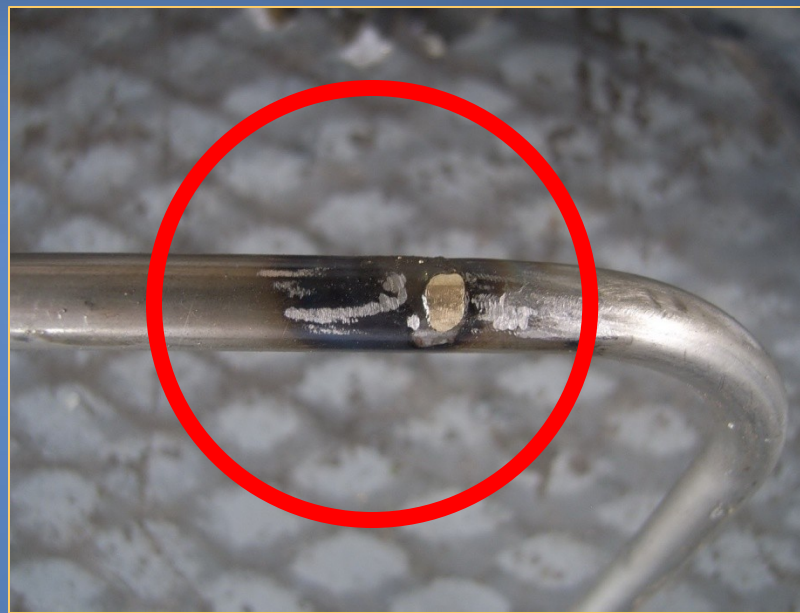
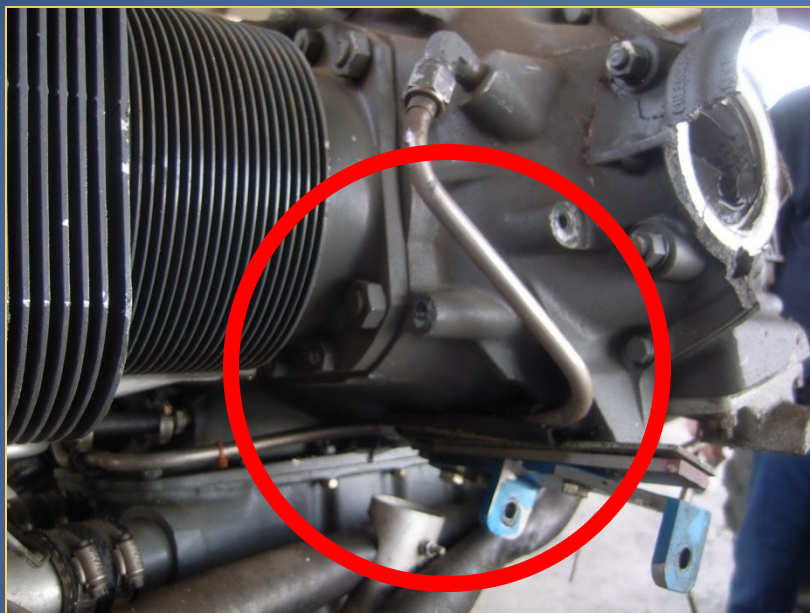
Mechanical Problem

- Oil leak discovered 6 weeks earlier
- Source of leak: propeller governor high pressure oil line
- Weld repair was made
- Pilot departed for test flight, but chose to conduct cross-country flight

Accident Site



Wreckage Examination



Missed Opportunities

- Stick to original maintenance test flight plan
- Avoid turning maintenance flight into personal cross-country flight
- Review:
 - Manufacturer's service bulletin
 - FAA airworthiness directive

ASI Perspectives

- Know the aircraft
- Land as soon as possible
- Stick to the original plan
- Emergency procedures
 - Fly the aircraft
 - Practice
- Knowledge of service bulletins and FAA airworthiness directives



National Transportation Safety Board

Accident Involving Mechanical Failure



Michael Huhn, Presenter
Jose Obregon, IIC

Accident Synopsis

- Beech 36, single engine
- Pilot/owner planned personal round-trip night IFR flight
- Complete engine power loss on return leg
- Forced landing, pilot fatal

Pilot

- Sole owner/operator
- About 2,300 total flight hours
- Flight instructor, with multi-engine and instrument ratings

Background

- Engine: 10 hours since overhaul at time of pilot's purchase
- Pilot added about 50 hours prior to accident

Sequence of Events

- Engine oil pressure problem several weeks before accident
- Mechanic: Overhaul issue
- 1 week later, pilot said engine “seemed OK”
- No evidence of corrective actions

Sequence of Events

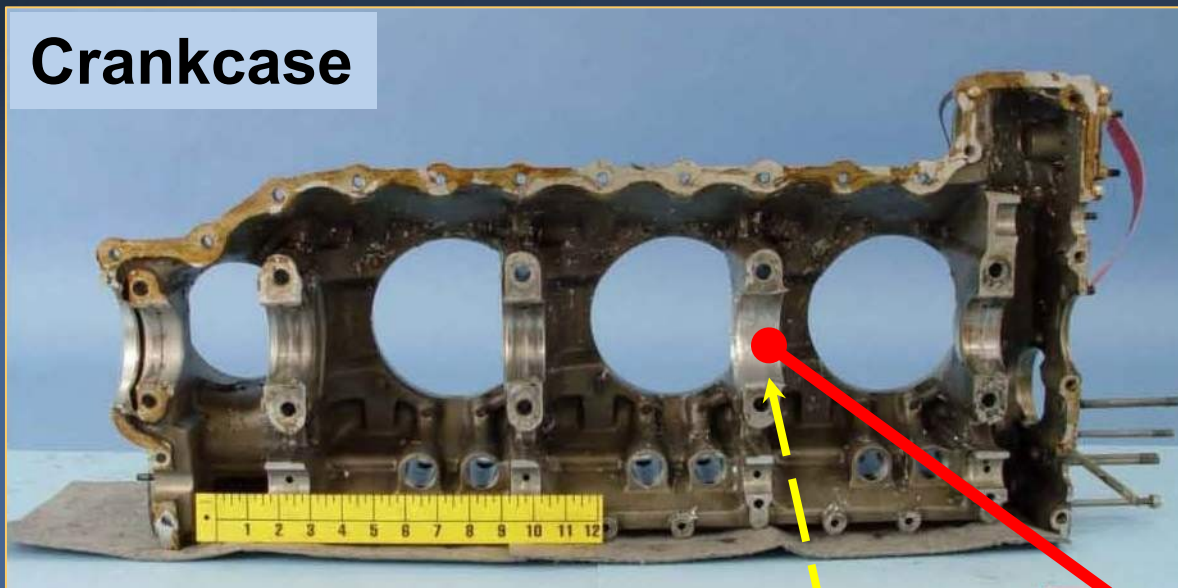
- No outbound leg problem reports
- Midnight taxi out, return to FBO
- Pilot requested mechanic (unavailable until morning)
- Pilot then opted to depart, IFR

Sequence of Events

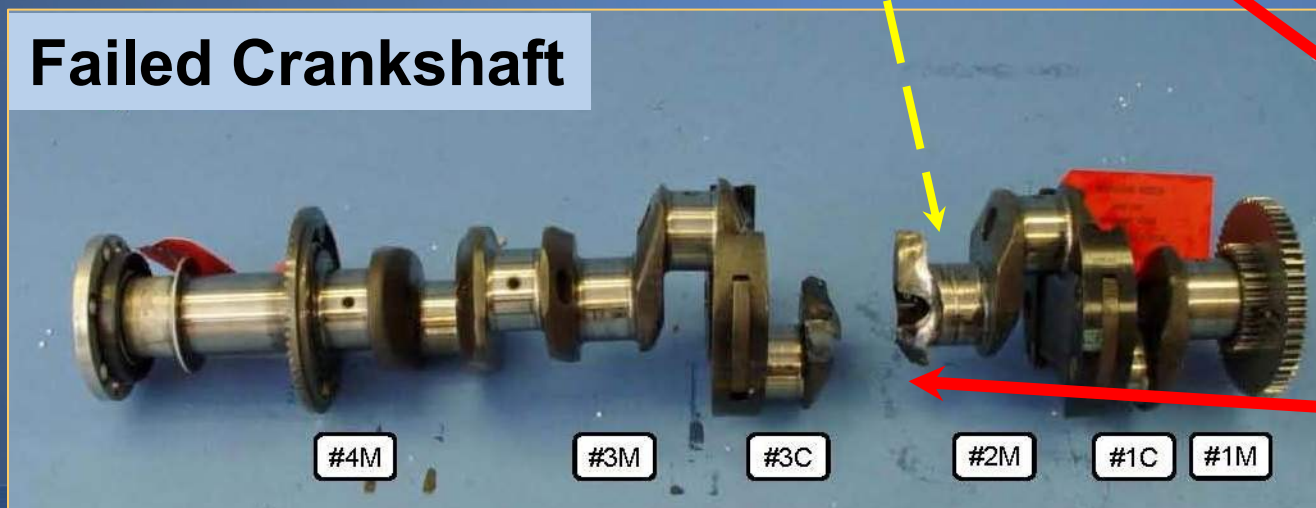
- Complete loss of power 9 miles from destination
- Night IMC forced landing
- Engine examination:
Catastrophic crankshaft failure

Failed Bearing → Failed Crankshaft

Crankcase



Failed Crankshaft



Failed Bearing



Opportunities Missed

- Actively address problem
 - Despite oil pressure issues, continued to operate airplane
- Take conservative approach
 - Ground airplane until problem identified and resolved

ASI Perspectives

- Pilot increased risk
 - Single-engine night IMC
- Maintenance
 - Recency and extent does not always ensure safety
- Most failures provide warnings
 - Don't downplay or ignore

ASI Perspectives

- Conservative approach can be inconvenient or costly, but it is far safer
- Inappropriate choices
 - Consider options and outcomes
 - Prevent outside factors from adversely influencing decisions and conduct



National Transportation Safety Board



Accident Involving Inadequate Maintenance

Jennifer Rodi - IIC

Accident Flight

- Piper PA-23-250
- Pilot fatally injured
- Horizontal stabilators separated in flight

Airplane Maintenance

- 100-hour inspection (current)
- Annual inspection (current)
- 10,924 hours total time
 - 73 hours since last inspection

Inadequate Maintenance

Stabilator trim bellcrank



Stabilator trim pushrod



Inadequate Maintenance

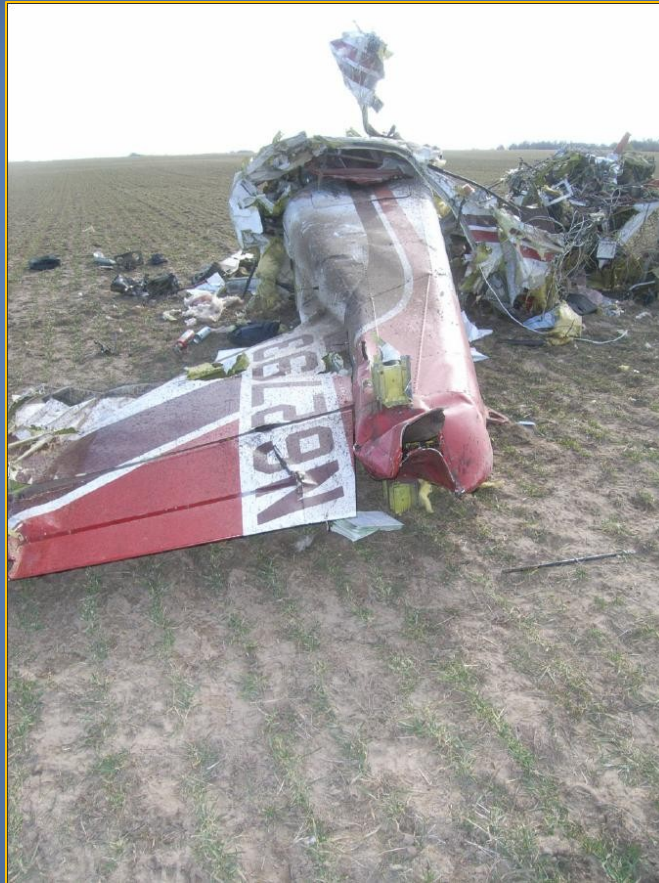
Left stabilator



Right stabilator



Accident Site



Missed Opportunities

- Address working rivets in both stabilators
- Address freeplay in stabilator trim bellcrank
- Properly install securing nut and cotter pin
- Perform adequate maintenance

ASI Perspective

- Mistakes disheartening, accidents preventable
- Accept professional responsibility
- Follow guidelines and regulations
- Speak up when unsafe practices observed or encouraged



National Transportation Safety Board



Maintenance Related Accident

Joshua Cawthra, IIC

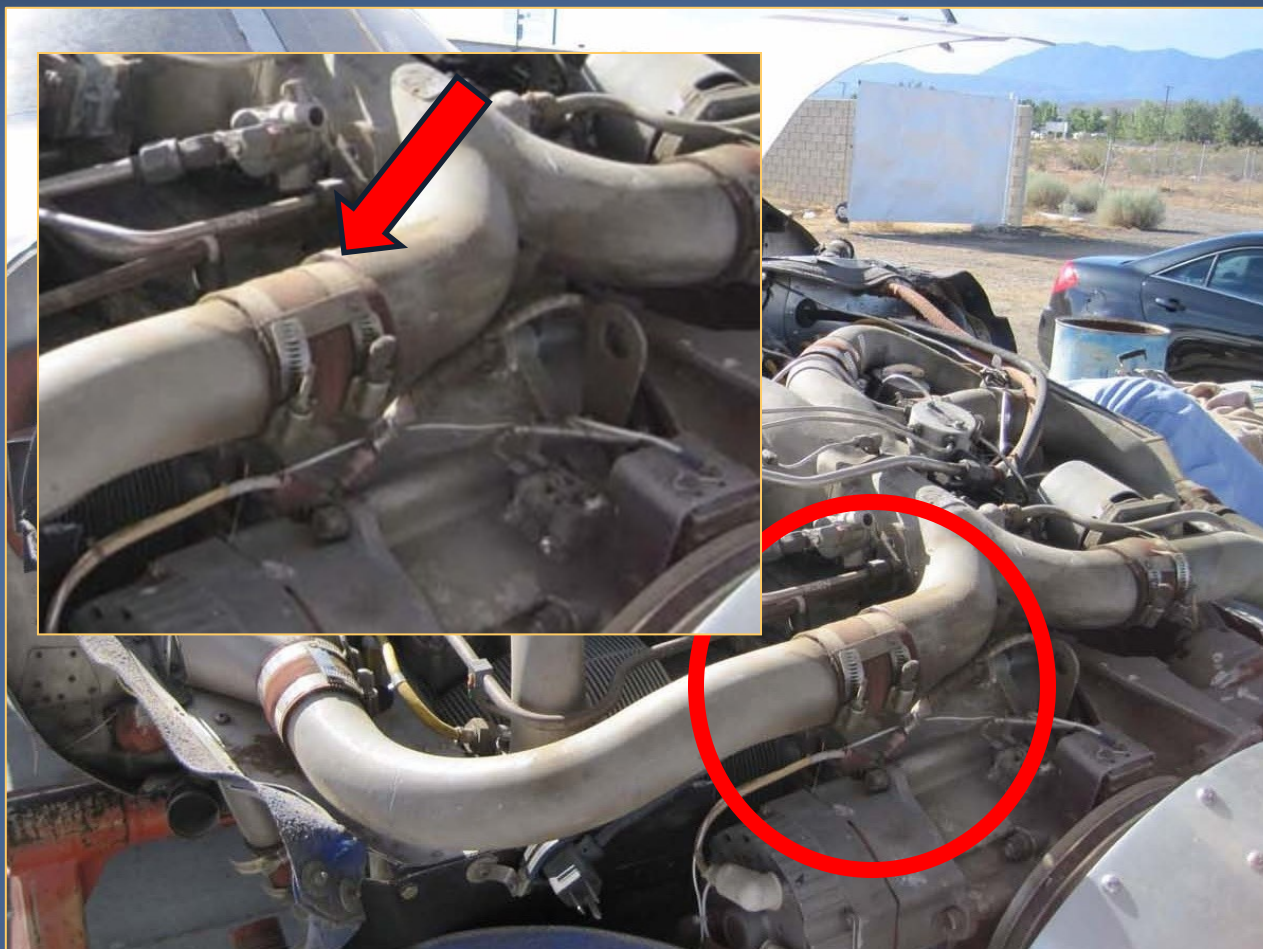
Accident Flight

- Piper PA-46-310P
- Injuries: one serious, one minor
- First flight after maintenance
- Departed 37 minutes before accident

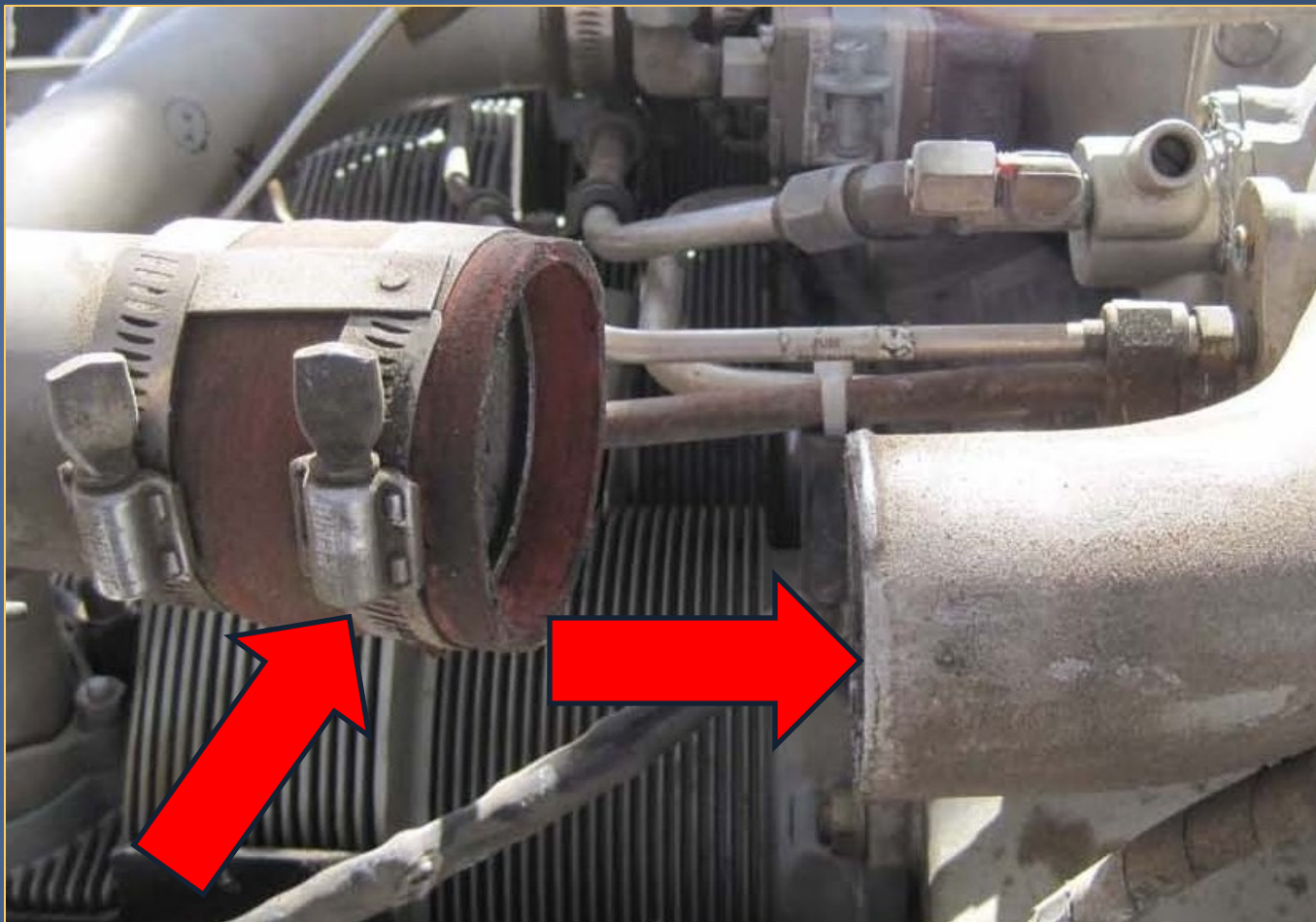
Accident Flight

- Loud bang from engine, immediate loss of engine power
- Diverted to a nearby airport
- Forced landing to an open field

Wreckage Examination



Wreckage Examination



Missed Opportunities

- Perform local maintenance test flight
- Review manufacturer's service bulletins

ASI Perspectives

- Mechanics:
 - Review all documentation
 - Examine surrounding components
 - Double-check work, limit distractions
- Pilots:
 - Be prepared for problems
 - Plan ahead for emergencies

Summary

Two Safety Alerts:

“Is Your Aircraft Talking to You? Listen” and “Mechanics: Manage Risks to Ensure Safety”

- Accident summaries
- Links to educational resources
- “What can pilots/mechanics do?”

What can pilots do?

- Stick to maintenance test flight plan, do not bring passengers
- Listen to your aircraft and act
- Allow time for troubleshooting
- Practice emergency procedures

What can mechanics do?

- Sound risk management prevents errors
- Follow instructions, ask for help
- Have another qualified person inspect critical items

What can mechanics do?

- Be thorough on routine tasks
- Don't defer safety of flight items
- Double-check all components “touched” during maintenance
- Understand fatigue, strive to eliminate contributors



National Transportation Safety Board